

CLAIMS

1. A loudspeaker comprising:
 - a hollow frame having opening sections at its upper side and lower side;
 - 5 a hat-shaped yoke whose both ends are supported by an inner wall of the frame;
 - a ring-shaped first magnet being coupled with a lower surface of an outer periphery of the yoke;
 - a columnar second magnet being coupled with an inner bottom of a
 - 10 middle section of the yoke;
 - a ring-shaped first plate being coupled with a lower surface of the first magnet;
 - a plate-type second plate being coupled with an upper surface of the second magnet;
 - 15 a first diaphragm whose outer periphery is fixed to a lower opening of the frame;
 - a second diaphragm whose outer periphery is fixed to an upper opening of the frame;
 - a ring-shaped first voice coil whose one end is fixed to the first diaphragm
 - 20 and other end is placed at a first magnetic gap formed between an inner peripheral surface of the first plate and an outer peripheral surface of the middle section of the yoke; and
 - a second voice coil whose one end is fixed to the second diaphragm and other end is placed at a second magnetic gap formed between an inner
 - 25 peripheral surface of the second plate and an inner peripheral surface of the middle section of the yoke,
 - wherein the frame is integrated with the yoke in assembling the frame.

2. A loudspeaker comprising:

a hollow frame having opening sections at its upper side and lower side;

5 a hat-shaped yoke whose both ends are supported by an inner wall of the frame;

a ring-shaped first magnet being coupled with a lower surface of an outer periphery of the yoke;

a columnar second magnet being coupled with an inner bottom of a middle section of the yoke;

10 a ring-shaped first plate being coupled with a lower surface of the first magnet;

a plate-type second plate being coupled with an upper surface of the second magnet;

15 a first diaphragm whose outer periphery is fixed to a lower opening of the frame;

a second diaphragm whose outer periphery is fixed to an upper opening of the frame;

20 a ring-shaped first voice coil whose one end is fixed to the first diaphragm and other end is placed at a first magnetic gap formed between an inner peripheral surface of the first plate and an outer peripheral surface of the middle section of the yoke; and

25 a second voice coil whose one end is fixed to the second diaphragm and other end is placed at a second magnetic gap formed between an inner peripheral surface of the second plate and an inner peripheral surface of the middle section of the yoke,

wherein the frame is integrated with an outer peripheral part of a connected-component which is formed by coupling the yoke with the first

magnet and the first plate.

3. The loudspeaker of claim 1 or 2,

wherein at least one of an upper surface of the yoke and a lower surface

5 thereof is integrated as a reference plane in mounting for a mold of the frame.